E1/1 immunoreactive fragment thereof.

REMARKS

Claims 16-27 are pending. Claims 16-24 are allowed. Claims 25-27 are under examination. Applicants have amended claim 25 in order to introduce certain format changes. Applicants maintain that these amendments raise no issue of new matter, and respectfully request entry of this Amendment. Upon entry of this Amendment, claims 16-27 will still be pending and claims 25-27 will still be under examination.

Pursuant to the requirements of 37 C.F.R. 1.121(b)(2), applicants annex hereto as Exhibit A claim 25 marked up to show the changes made herein relative to the previous version thereof.

In view of the arguments set forth below, applicants maintain that the Examiner's rejections made in the January 22, 2003 Office Action have been overcome, and respectfully request that the Examiner reconsider and withdraw same.

The Claimed Invention

This invention relates to the detection and/or quantification of the extracellular domain of the human neu gene product in the biological fluids of humans using monoclonal antibodies which are capable of binding to this protein. Specifically, this invention provides a monoclonal antibody which is capable of binding to the extracellular domain of the human neu gene product, said product being detectable in a biological fluid by its immunoreactivity with a monoclonal antibody produced by the hybridoma cell line OD-3, NB-

3 or TA-1, or with an immunoreactive fragment thereof.

Rejections Under 35 U.S.C. §102(a)

The Examiner rejected claims 25-27 under 35 U.S.C. §102(a) as allegedly anticipated by McKenzie, et al. (Oncogene, Vol. 4, No. 5, pages 543-548, May 1989). The Examiner also rejected claims 25-27 under 35 U.S.C. §102(a) as allegedly anticipated by Masuko, et al. (Jpn. J. Cancer Research, Vol. 80, pages 10-14, January 1989).

In response, applicants respectfully traverse, and maintain that the cited references are not prior art against the rejected claims and, in the alternative, do not anticipate them.

In the instant Office Action, the Examiner refers the applicants to the assertion made in the October 11, 2001 Office Action that prior to September 29, 1989, none of the CIP applications cited for priority disclosed the full scope of the instant claims. Specifically, the Examiner pointed out that limitations and terminology including "p100" and "molecular weight from about 97,000 daltons to 115,000 daltons" were not disclosed.

In response, applicants point out that claims 25-27, as amended, do *not* recite these terms.

Applicants also contend that, contrary to the Examiner's assertion, the subject matter of the currently pending claims is supported in, and hence entitled to the priority date of, priority application U.S. Serial No. 07/182,501, filed April 18, 1988 (the "'501 application"). The '501 application discloses antibodies to neu specific for the extracellular domain. Specifically, at page 15,

first paragraph, the application states that "[p]referred antibodies are specific for the extracellular domain of the neu encoded gene product." Applicants also draw the Examiner's attention to pages 57-58, page 14, page 16, pages 48-49 and original claims 14-16 of the '501 application, wherein monoclonal antibodies specific for the extracellular domain of neu gene encoded product are disclosed. Furthermore, on page 54 of the '501 application, exemplary such monoclonal antibodies designated TA-1, OD-3 and NB-3 are disclosed. In addition, hybridomas which secrete such antibodies are disclosed, for example, on pages 48-49 and 54 of the '501 application. In addition, applicants draw the Examiner's attention to page 14 of the '501 application, wherein the detection of neu gene encoded protein in various biological fluids using immunoassay techniques is disclosed.

Applicants note that support in the '501 application for the claimed subject matter had been clearly presented to the Examiner in the April 29, 1998 Communication in Response to January 7, 1998 Final Office Action and, in a subsequent June 12, 1998 Communication, the Examiner held all claims allowable.

In view of the above remarks, applicants maintain that McKenzie, et al. and Masuko, et al. are not prior art against the rejected claims and, in the alternative, do not anticipate these claims under 35 U.S.C. §102(a).

Rejections Under 35 U.S.C. §102(e)

The Examiner rejected claims 25-27 under 35 U.S.C. §102(e) as allegedly anticipated by Ring, et al. (U.S. Patent No. 6,054,561). The Examiner also rejected claims 25-27 under 35 U.S.C. §102(e) as

allegedly anticipated by Hudziak, et al. (U.S. Patent Nos. 5,720,937 and 5,772,997).

In response to the Examiner's rejections, applicants respectfully traverse.

To anticipate the invention of claims 25-27, each of the Ring and Hudziak patents would have to teach each and every element thereof.

None of these references does this.

Ring teaches a breast cancer-specific antibody designated 520C9 that binds to an approximately *200 kDa* protein identified as "c-erbB-2." Ring does *not* teach a monoclonal antibody which is capable of binding to the extracellular domain of the human neu gene product which, as stated on page 6 of the specification, has a molecular weight of about 97 to 115 kDa. Furthermore, Ring does not teach that the product is detectable in a biological fluid by its immunoreactivity with a monoclonal antibody produced by the hybridoma cell line OD-3, NB-3 or TA-1, or with an immunoreactive fragment thereof.

Each of the Hudziak patents teaches a monoclonal antibody that specifically binds to the extracellular domain of the HER2 receptor, and an assay for detecting tumors by determining the extent of binding of the antibody to *tumor cells*.

Like Ring, the Hudziak patents do *not* teach that the product is detectable in a biological fluid by its immunoreactivity with a monoclonal antibody produced by the hybridoma cell line OD-3, NB-3 or TA-1, or with an immunoreactive fragment thereof. Also like

Ring, the Hudziak patents do not teach that the product is detectable in a biological fluid at all. The Hudziak patents therefore fail to teach each and every element of the rejected claims.

Therefore, the Ring and Hudziak patents all fail to teach each and every element of claims 25-27, and therefore, claims 25-27 are novel over each of these references.

In view of the above remarks, applicants maintain that claims 25-27 satisfy the requirements of 35 U.S.C. §102(e).

Summary

In view of the remarks made herein, applicants maintain that all of the claims pending in this application are now in condition for allowance. Accordingly, allowance is respectfully requested.

If a telephone interview would be of assistance in advancing the prosecution of the subject application, applicants' undersigned attorneys invite the Examiner to telephone them at the number provided below.

No fee is deemed necessary in connection with the filing of this Amendment. However, if any fee is required, authorization is hereby given to charge the amount of such fee to Deposit Account No. 03-3125.

Respectfully submitted,

I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to:

Assistant Commissioner for Patents
Washington, D.C. 20231.

4/22/03
Date

Alan J. Morrison
Reg. No. 37,399

John P. White
Registration No. 28,678
Alan J. Morrison
Registration No. 37,399
Attorneys for Applicants
Cooper & Dunham LLP
1185 Avenue of the Americas
New York, New York 10036
Tel. No. (212) 278-0400

Marked-Up Version of Amended Claim

25. (Amended) A monoclonal antibody which is capable of binding to the extracellular domain of the human neu gene product, said product being detectable in a biological fluid by its immunoreactivity with a monoclonal antibody [or immunoreactive fragment thereof] produced by a hybridoma cell line of any of claims 16, 17 or 18, or with an immunoreactive fragment thereof.